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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/565,555

01/23/2006

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EXAMINER

NGUYEN, VU ANH

ART UNIT

PAPER NUMBER

1796

MAIL DATE

DELIVERY MODE

11/05/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/565,555	Applicant(s) HAYASHI ET AL.	
	Examiner Vu Nguyen	Art Unit 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 August 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 and 5-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 5-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. Acknowledgement is made of Applicant's amendment to the claims, wherein claim 4 has been canceled, claims 1 and 2 have been amended, and new claims 8-14 have been added.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. Claims 1-3 and 5-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gore et al. (US 2003/0055178 A1) in view of Akers et al. (US 6,652,634 B1).

5. Regarding the limitations set forth in these claims, Gore et al. (Gore, hereafter) teaches an aqueous ink consisting essentially of a carbon black, a crosslinked

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dispersant, and an aqueous medium [0106], wherein the crosslinked dispersant consists essentially of a multi-ethylenically unsaturated monomer [0032], a hydrophobic monomer [0034-0045], and an acid-containing monomer [0071-0072]. The hydrophobic monomer is chosen from an extensive list of monomers that include alkyl (meth)acrylate and vinyl aromatic monomers [0044]. The dispersant has an M_w of 15,000-100,000 [0059]. The composition of the dispersant consists essentially of 1-25 wt% of the crosslinkable monomer [0032], 20-40 wt% of the acidic (anionic) monomer [0072], and the hydrophobic monomer makes up the remaining portion. The dispersant-to-pigment weight ratio is well taught [0076] and, in one example, given to be 1:4 [0106]. The pigment particle size is typically 90-120 nm [0106-0107].

6. It is clear that the prior art teaches all the limitations set forth in claims 1-3 and 5-14 with the following exceptions: (1) although vinyl aromatic monomers are taught, the dispersant used in the inventive examples generally has butyl acrylate as hydrophobic monomer; and (2) although amine-based monomers are taught [0042 & 0045], the prior art fails to teach the use of a cationic monomer in place of the anionic monomer.

7. Akers et al. (Akers, hereafter) teaches polymeric dispersants used for aqueous pigmented inks for inkjet recording (Title). The polymeric dispersants are copolymers having a hydrophilic segment and a hydrophobic segment (Abstract). The hydrophilic segment, which imparts water solubility/dispersibility and stability to the dispersed pigment (col. 1, lines 40-42), can be an **anionic** or **cationic** monomer (col. 2, lines 34-39). "**The hydrophobic segment is responsible for anchoring the polymeric dispersant to the pigment particle. The present invention has found that electron**

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donor/acceptor interactions via aromatic groups and hydrogen bonding are ideal for effective binding between the pigment and the dispersant. When aromatic groups are used in the dispersant, and the more aromatic groups in the dispersant, the better the dispersion stability." (col. 4, lines 53-60, emphasis by examiner).

8. In light of the teachings by Akers, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have used an aromatic monomer as a hydrophobic monomer, and an ammonium-based cationic monomer, if so desired, as a hydrophilic monomer, in the dispersant taught by Gore so that, due to the presence of high content of aromaticity of the dispersant, the interactions between the pigment and the dispersant are strengthened and, consequently, the pigment dispersion is stable in an aqueous ink composition.

Response to Arguments

9. Applicant's arguments with respect to claims 1-7 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vu Nguyen whose telephone number is (571)270-5454. The examiner can normally be reached on M-F 7:30-5:00 (Alternating Friday Off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on 571-272-1114. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Vu Nguyen
Examiner
Art Unit 1796

/David Wu/
Supervisory Patent Examiner, Art Unit 1796